Manuel Filipe Cordeiro Silva

Licenciado em Engenharia do Ambiente

The integration of SEA and sustainability issues in EMS of small islands organizations: the case of tourism sector

Dissertação para obtenção do Grau de Mestre Engenharia do Ambiente, Perfil de Engenharia de Sistemas Ambientais

Orientador: Prof. Doutor Tomás Augusto Barros Ramos, Professor Auxiliar, Faculdade de Ciências e Tecnologia – Universidade Nova de Lisboa

Co-orientador: Eng.ª Alexandra Ambrósio Polido, Investigadora do CENSE, Center for Environmental and Sustainability Research, Faculdade de Ciências e Tecnologia – Universidade Nova de Lisboa

Júri:

Presidente: Prof. Doutor João Miguel Dias Joanaz de Melo

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Para a família, o mais precioso bem da vida.

Especialmente para ti, Pai.

Enquanto houver vida em mim, haverá vida em ti.

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Abstract

Sustainability is seen as mean of weakening the challenges faced by small islands. Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) are referenced as important tools to integrate sustainability and environmental issues into strategic and project level of the decision-making, respectively. Tiering between these instruments is a rather discussed subject, but there is often a forgotten link between SEA, EIA and Environmental Management Systems (EMS), established at organizational level. This research explores this forgotten link assessing the integration of sustainability issues along a decision-making hierarchy, from strategic to organizational level, regarding plans subjected to SEA process and organizations with implemented EMS. A qualitative and quantitative content analysis was used in a case study of the Azores archipelago tourism sector. The obtained results show that the integration of recommendations of higher level documents along the decision-making hierarchy remains insufficient, due to the lack of articulation between plans. The integration of SEA and EIA in all phases of the decision-making hierarchy could possibly contribute to a greater articulation between plans and disseminate sustainability concerns.

Keywords: Environmental Management Systems, Small Islands, Strategic Environmental Assessment, Sustainability, Tourism.

Resumo

As ilhas de pequena dimensão estão sujeitas a desafios específicos e a sustentabilidade é vista como um meio para minimizar os seus efeitos. A Avaliação Ambiental Estratégica (AAE) e a Avaliação de Impacte Ambiental (AIA) são instrumentos importantes para a integração de conceitos ambientais e de sustentabilidade em diferentes níveis da hierarquia de tomada de decisão, tanto ao nível estratégico como ao nível de projeto. Apesar da relação entre estes dois instrumentos ser amplamente referenciada, a ligação entre AAE, AIA e Sistemas de Gestão Ambiental (SGA), materializada no nível organizacional, tende a ser negligenciada. O presente trabalho de investigação tenta explorar este elo de ligação através do estudo da integração de conceitos de sustentabilidade ao longo da hierarquia de tomada de decisão, desde o nível estratégico até ao nível organizacional, envolvendo planos sujeitos ao processo de AAE e organizações com SGA implementado. Para tal, adoptou-se uma metodologia baseada em análise de conteúdo qualitativa e quantitativa, aplicada ao caso de estudo do sector do turismo no arquipélago dos Açores. Os resultados obtidos demonstram que a integração de recomendações facultadas por documentos de nível superior na hierarquia de tomada de decisão permanece insuficiente devido à ineficiente articulação entre planos. A integração de AAE e AIA em todas as fases da hierarquia de tomada de decisão poderia contribuir para uma maior articulação entre planos e disseminar conceitos de sustentabilidade.

Palavras-Chave: Avaliação Ambiental Estratégica, Ilhas de Pequena Dimensão, Sistemas de Gestão Ambiental, Sustentabilidade, Turismo

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ABBREVIATION AND ACRONYMS LIST

EIA	Environmental Impact Assessment
EMAS	Eco-Management and Audit Scheme
EMS	Environmental Management Systems
HMA	Hotel Marina Atlântico
PDM	Land-use Plan (Plano Director Municipal)
PMOT	Municipal Land-use Plans (Planos Municipais de Ordenamento do Território)
POTRAA	Tourism Management Plan for the Autonomous Region of the Azores (Plano de Ordenamento Turístico da Região Autónoma dos Açores)
PROTA	Regional Land-use Plan for the Autonomous Region of the Azores (Plano Regional de Ordenamento do Território para a Região Autónoma dos Açores)
SEA	Strategic Environmental Assessment
SIDS	Small Islands Developing States
TMH	Terceira Mar Hotel

1 Introduction

Small islands are distinctive territories that exhibit exceptional features and are exposed to unique challenges. Their intrinsic insularity leads them to displace narrow resources, which will deprive them from massively developing productive activities and ultimately lead them to depend heavily on external markets (Seetanah 2011; UN-OHRLLS 2011). The remoteness typical of these territories results in high energy, infrastructure, communication and services costs, alongside with the discontinuity of transport modes (Hein 2010; UN-OHRLLS 2011). On top of that, small islands displace fragile natural environments, with increased vulnerability for natural disasters (Pelling & Uitto 2001; Kerr 2005).

One possible way to minimize the effects of these challenges, and at the same time mitigate the impacts of human activities and enhance the recognized potential of these territories, is to promote sustainability approaches to the development of small islands (UN 1994; Kokkranikal et al. 2003; Deschenes & Chertow 2004; Stock 2014). This type of approach can help the environmental, human and economic development for these territories and can be pursued through the development of planning instruments and environmental management systems (Polido et al. 2014; Stock 2014).

Sustainability is closely linked with decision-making processes and according to (OECD 2006), policies are the planning instruments at the top of the decision-making hierarchy, shaping the subsequent plans, programmes and projects. Strategic Environmental Assessment (SEA) can be an important tool for implementing sustainability from the top of the decision-making hierarchy as it *"allows the integration of environmental considerations, alongside with social and economic aspects*" into policies, plans and programmes (OECD 2006 p.25). On the other hand, Environmental Impact Assessment (EIA) introduces environmental considerations into projects (OECD 2006). Tiering between these two instruments is widely documented in the literature (e.g. Abaza et al. 2004; Morrison-Saunders & Fischer 2006; OECD 2006). However, there is often a forgotten link between SEA, EIA and Environmental Management Systems (EMS), established at an organizational level (Abaza et al. 2004), which could contribute to the integration of sustainability concerns throughout the decision-making hierarchy.

EMS are a set of processes and practices that help organizations achieve its environmental goals through systematic regulation of its operations (Stapleton et al. 2001; WRAP 2015). The organizational nature of these instruments puts them on the opposite side of policies in the decision-making hierarchy, nearby project-level, meaning that they should implement the considerations established on policies, plans and programs. EMS are proven to be effective on many issues such as environmental and operational aspects of an organization (Tan 2005; To et al. 2012), but there is little information regarding environmental management systems as drivers or products of policies, plans and programmes implementation.

The main goal of this research is to assess if the different levels of the decision-making hierarchy, from strategic to organizational level, are linked, particularly in regard to sustainability matters, and how can SEA and EMS contribute to its inclusion in small islands. To do so, a case study approach of the Azores archipelago was applied. Having the capacity to bring foreign exchange into the region, generate employment, stimulate growth and reduce regional asymmetries (Soukiazis & Proença 2008), tourism stands as a strategic sector for the economic development of small islands (Abeyratne 1999; Seetanah 2011), and the Azores archipelago is no exception (INTA 2011; RAA 2013). For its importance in these territories, the tourism sector was chosen as a key aspect in this research.

Two tourism organizations with implemented EMS, two municipal plans, one tourism plan and one regional spatial plan and associated SEA were chosen to reflect the decision-making hierarchy in this region. A content analysis was conducted with the objective of assessing how closely linked are these documents and how they include sustainability matters. This paper starts with a Literature Review on small islands, Tourism, SEA and EMS, goes on to a description of the used Methods, including the definition of the conditions to the documents selection and the case study approach, and lastly presents the main research findings and conclusions, with the analysis and comparison of the selected documents.

2 Literature Review

2.1 Small Islands

At first sight, everyone knows what an island is: a body of land delimited by sea. But when do we consider an island small or big? When is an island considered a continent? Reviewing the literature on the subject, Polido et al. (2014) concluded there was no strict standard when defining “small islands” and that different study contexts should meet different definitions.

Regardless of the many different ways to define a small island, there is a set of features and challenges common for any of these special territories. Small islands are exposed to increased vulnerability due to their unique features, which mainly derivate from their geographic location, smallness in size and remoteness (Abeyratne 1999). Kerr (2005) classified islands’ limitations in two categories: issues of scale, which include islands limited capacity of human and natural resources; and issues of isolation, which are related to the additional transport costs and difficulties and vulnerability to natural disasters.

Island economies face enormous challenges based on both types of limitations. On the one hand, the scarcity of natural resources doesn’t allow the mass development of productive activities such as industry and manufacturing (Seetanah 2011). On the other hand, the remoteness of these territories promotes a discontinuity of transport modes, which implies increased transport costs (Hein 2010). Both issues lead to Islands dependence on imports and external trade, which increases their economic vulnerability (Hein 2010; Seetanah 2011).

Being exposed to enormous challenges, island societies can grow strong. The particular characteristics and challenges faced by these territories promote the creation of relations of trust and collective action from the population, resulting in dense social networks and contributing for small islands high level of resilience (Petzold & Ratter 2015). Campbell (2009) argues that the key for this degree of resilience lies in the traditional knowledge on island environment held by island communities, which historically enabled their sustained settlement and reduced the consequences of natural disasters.

Small islands face specific challenges due to its own and intrinsic insularity, meaning that every island has, one way or another, to deal with these kind of threats. However, these challenges and threats can be empowered in some contexts. For example, archipelagos face issues relating with the different stages of development in the various islands, the added levels of governance and the difficulty of travel between islands (Bardolet & Sheldon 2008). Another type of Islands that need special attention are Small Islands Developing States (SIDS), which generally face developing problems and have vulnerable and fragile economies (Abeyratne 1999; UN-OHRLLS 2011).

Sustainability approaches to small islands development can help minimize the effects of these challenges, mitigate the impacts of human activities and enhance the recognized potential of these territories (UN 1994; Kokkranikal et al. 2003; Deschenes & Chertow 2004; Stock 2014). Internationally,

the importance of this kind of approach for islands is recognized in programs like the Barbados Programme of Action for the Sustainable Development of SIDS.

Since 1992, when the concept of SIDS was first formally recognized at the United Nations Conference on Environment and Development, held in Rio de Janeiro and also known as Earth Summit, the concern about these specific territories has been continuous. Two years later, in 1994, the Barbados Programme of Action for the Sustainable Development of SIDS (BPOA), which identifies priority areas and specific actions to address SIDS special challenges, was adopted at the United Nations Global Conference on the Sustainable Development of SIDS. The review documents of BPOA followed in 1999 (BPOA+5) and 2005 (Mauritius Strategy of Implementation). More recently, at the United Nations Conference on Sustainable Development, also known as Rio+20 for setting the 20th anniversary of the Earth Summit, special attention was still given to SIDS 20 years after the international community started worrying about these territories (UN 2012, p. 34):

> *"178. We reaffirm that small island developing States remain a special case for sustainable development in view of their unique and particular vulnerabilities, including their small size, remoteness, narrow resource and export base, and exposure to global environmental challenges and external economic shocks, including to a large range of impacts from climate change and potentially more frequent and intense natural disasters. (…) "*
>
> *"179. We call for continued and enhanced efforts to assist small island developing States in implementing the Barbados Programme of Action and the Mauritius Strategy.(…)"*

The latest act on SIDS from the international community was the United Nations Third International Conference on SIDS, which was held on September 2014 in Samoa. From this conference emerged the SIDS Accelerated Modalities of Action (SAMOA) Pathway on which the Heads of State and Government and high-level representatives reaffirm their commitment to the sustainable development of SIDS.

2.2 Tourism in Small Islands

The unique natural and cultural features typical in small islands, makes them exceptionally attractive for tourism activity (Giannoni & Maupertuis 2007; Seetanah 2011). This activity can be important for the development of small islands, particularly SIDS (Abeyratne 1999), being even recognized for having comparatively higher growth effects on small islands than on other generic territories (Seetanah 2011). In fact, tourism remains a hugely important activity not only for these specific territories, but also at a global scale. According to UNWTO (2014) tourism's direct, indirect and induced impact represents 9% of the world Gross Domestic Product (GDP) and 6% of world's exports.

Tourism brings foreign exchange into a country (Diedrich 2010). This foreign wealth can be used to import goods for production, contributing to the balance of payments and representing an important income source for the economy (Seetanah 2011). This activity has the potential for generating employment, stimulating growth, reducing regional asymmetries and, due to its transversal nature, can bring positive externalities to other economic sectors, such as retailing, manufacturing, agriculture, transport and other services (Soukiazis & Proença 2008). Despite its evident benefits, with tourism activity comes along a potential damaging effect on the environment, culture and societies (Abeyratne 1999; Budeanu 2005; Davenport & Davenport 2006).

The environmental impacts driven from tourism are usually given special attention due to its potential irreversible nature (Davenport & Davenport 2006) and are related not only to the exploitation of tourism activity itself, but also to the infrastructure needed to support it (Priskin 2003). The pressure on the environment starts with the land demand for tourism development (Hampton & Jeyacheya 2015) and proceeds with resource consumption needed for the activity, whether it's directly induced by tourists or indirectly made by all the sectors that support tourism activity (Davenport & Davenport 2006).

As regard for the potential social and cultural negative effects of tourism, Budeanu (2005) warns for the poor and seasonal job conditions, the cultural shocks between tourists and locals and the difficulty for cultural exchange. The author gives special attention to the irreversible damaging effects of tourism, such as the ones that derivate from sexual tourism.

Specifically for small islands, Hampton & Jeyacheya (2015) highlight the governance and power issues that can come along with tourism development. The author claims that the history shows transitions of power from the local community to the regional and national governments, which lead to the isolation of the community in the decision-making process.

Although tourism has generic and common impacts, different types of tourism activity can lead to different potential damaging effects. Mass tourism and large-scale tourism are considered to have more severe negative effects when compared with small-scale tourism (e.g. eco-tourism, nature tourism) (Budeanu 2005). This is particularly perceptible when we think of the infrastructures needed to assist large-scale tourism. Davenport & Davenport (2006) claim that the infrastructure and transport arrangements required to assist mass tourism stand as its biggest ecological threat. Along the same lines, Priskin (2003) argues that the infrastructure and building construction associated with coastal and mass tourism has more potential damaging effects than the recreation activity itself.

The negative effects of tourism by itself can raise a lot of questions when defining management strategies for the activity, but these impacts are particularly complex in small islands due to their smallness, geographical dispersion, remoteness, sensitive environment and overall vulnerability (Kokkranikal et al. 2003; Bardolet & Sheldon 2008; Seetanah 2011). At the same time this activity is also particularly important for small islands - for example, tourism is seen as the main factor for SIDS

development (Abeyratne 1999) - meaning that a balance between tourism activity and sustainability is hugely important for these type of territories (Kokkranikal et al. 2003).

Generally, all tourism incomes of an island are based on the direct or indirect use of the environment, meaning that the overexploitation of tourism will lead to the decrease of environmental attractiveness of the island, which will affect the future tourism activity (Giannoni & Maupertuis 2007). Balancing these aspects in a sustainable tourism management approach is not easy. In order to promote a sustainable tourism activity in small islands it is essential to integrate preventive approaches in all tourism strategies and at all levels of governance, as well as having consistent monitoring of the environmental impacts of tourism activities (Abeyratne 1999; Budeanu 2005).

The concept of sustainable tourism was firstly proposed by the World Tourism Organization in 1988, with tourism "leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems" (UN 2001, p. 3). However, despite its benefits on the long term, the sustainable tourism approach is usually overtaken by the urge for uncontrolled growth felt by the decisional authorities, where short-term political and financial incentives are given priority when compared to the potential negative impacts of tourism activity (Diedrich 2010).

For the specific case of SIDS, the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of SIDS, which was held on January 2005 and sets a review of 10 years of the BPOA, promotes the implementation of sustainable tourism practices (UN 2005, p.19):

> *"52. Small island developing States, with the necessary support of regional and international tourism organizations, should also find effective ways and means to develop and implement sustainable tourism development plans, in partnership with all relevant stakeholders, in particular the private sector, and should integrate these plans into their national strategies for sustainable development. In addition, they should develop and implement community-based initiatives on sustainable tourism, and build the necessary capacities of civil society and local stakeholders, while protecting culture and traditions and effectively conserving and managing natural resources."*

2.3 Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is a widely addressed and defined subject in the literature (Thérivel 2010) and can be described as a formal and systematic process that addresses the environmental effects of policies, plans and programmes (Brown & Thérivel 2000; Abaza et al. 2004; Vicente & Partidário 2006; Thérivel 2010), meaning that the main goal of this procedure is to ensure that environmental considerations and standards are integrated into strategic decision-making (Dalal-Clayton

& Sadler 2004; Sadler 2005a; Runhaar & Driessen 2007; UNECE 2012). The focus on economic and social subjects rather than on environmental issues alone is an increasing discussed topic (Sadler 2005a) and sustainability objectives and indicators are being used to guide preparation of plans and programmes (Abaza et al. 2004). The importance of SEA in promoting and enhancing sustainable development at planning and policy levels is a recognized subject (Thérivel & Partidário 1996; Stinchcombe & Gibson 2001; Sheate et al. 2003).

From the legal and policy precedents for SEA, established in the primary phase of EIA implementation in the early 1970s, SEA institution evolved to its formalization on different countries and organizations, beginning in the World Bank (1989) and Canada (1990). Nowadays, SEA is well established partially because of the international legal instruments on the subject. In Europe the transposition of the Directive 2001/42/EC by European Union member states managed to increase the number of effective SEA systems, while the UNECE Protocol on SEA will potentially extend this trend beside EUs boarders (Sadler 2005b).

SEA is an instrument shaped to environmentally assess the higher levels of decision-making. At the top of the decision-making hierarchy lie the policies, since they shape the subsequent plans, programmes and projects. At the bottom of the hierarchy, on project level, Environmental Impact Assessment (EIA) is the most suitable assessment method (OECD 2006). Tiering between these two instruments is widely documented in the literature (Brown & Thérivel 2000; Abaza et al. 2004; Cherp et al. 2006; OECD 2006; Partidário 2007; Gauthier et al. 2011).

SEA emerged from the need for a tool of assessment that met the strategic nature of policies, plans and programmes, rather than those applicable to individual projects and suitable for EIA (Wood & Dejeddour 1992). Unsurprisingly, SEA had its foundation based on the same principles and processes of EIA (Vicente & Partidário 2006; Morgan 2012), extending the aims of EIA to the higher levels of decision-making, when major decisions are still open (Abaza et al. 2004). Although these two instruments are closely linked, they pose different features according to their purposes. While SEA's premise is to understand a problem and explore its solution from a sustainability perspective, EIA's purpose is to appraise if a given solution is the most appropriate to solve a problem in an environmental perspective (Partidário 2007). To deliver these objectives, SEA is focused on understanding the context and the different perspectives of a problem and addresses it through communication and searching for solutions that will promote a context of sustainability. In contrast, EIA appraises the current condition and future evolution of a given problem and its proposed solution, supporting decision and providing alternative solutions (Partidário 2007).

Invariably project assessment applying EIA occurs in a policy context (OECD 2006) and SEA application on the higher level of decision-making will always affect the projects under the influence of such policy, plan or programme (UNECE 2012). Nevertheless, the two processes can and should be

applied together, complementing each other - while SEA support strategic-level decisions, EIA can provide a narrower scope at project-level (Ramos et al. 2015).

The strong link between EIA and SEA, in contrast with their distinct nature and purposes, led to the development of multiple forms of SEA, resulting in different approaches at strategic levels of decision-making (Vicente & Partidário 2006). According to some authors, this effect is enlarged by the multiple decision-making realities on which SEA is involved. Moreover, Brown & Thérivel (2000) argue that SEA methodology should be flexible and adapt to the decision-making context on which SEA is being applied, minding the existence of different agendas, actors and knowledge requirements, and meeting the needs of a particular circumstance with the appropriate tools. Despite its flexibility and multiple forms, SEA generally comprises the preparation of an environmental report and its scope determination, carrying out consultation and public-participation, in order to provide assistance for the decision-making process (Directive 2001/42/EC).

Public participation and communication are seen as key-elements to achieve sustainable development and solve environmental issues (Tran et al. 2002), leading to the encouragement of active participation of local communities, throughout capacity-building and environmental education, to accomplish sound development programmes (Tran 2006). Thus, effective communication is seen as a priority for many impact assessors, particularly in instruments that operate at strategic levels of decision-making (Vicente & Partidário 2006), where environmental and sustainability considerations can be more effectively incorporated.

Public participation promotes a more transparent and open decision-making process (Gauthier et al. 2011). Nevertheless, to influence decision-makers it is needed not only to transmit information, but also to transmit knowledge (Sheate & Partidário 2010). In order to decision makers address a problem and decide wisely, they need to perceive the problem as it is, meaning that communication is a key element to achieve SEA objectives and influence decisions (Vicente & Partidário 2006). However, providing technical information to decision makers can be difficult and communication problems can easily occur. In SEA technical and political approaches are seen as two equally important subjects, working together in order to facilitate the communication and achieve SEA objectives. Here, technicians are seen as another stakeholder, working for the same purpose of the other existing players – reaching a solution for the proposed problem. (Simos 1990 *fide* Gauthier et al. 2011).

Partidário (2007) defined the decisional time scale as essential for the accomplishment of SEA objectives, mainly because its effectiveness is reliant on how early is the SEA applied on the policies, plans and programmes formulation processes. The sooner SEA is applied, the more likely is to affect the decision-making process (Brown & Thérivel 2000; Runhaar & Driessen 2007; UNECE 2012). Cherp et al. (2006, p. 202) went further and stated that in SEA “shaping decisions ‘as early as possible’ is traditionally given more importance than examining what happens to these decisions (and the environment) after they have been made”. The author refers as this being the main reason for the relatively smaller importance

given to the SEA follow-up, alongside with the difficulty of addressing the outcomes of a strategic initiative, shaped by several connected decisions.

To reach its intended purpose and achieve, or promote, sustainable development, SEA outcomes should be seen as a way to look forward sustainable solutions, making the follow-up a crucial phase of SEA (Partidário 1996; Cherp et al. 2006). The follow-up of SEA is all about the outcome of an approved Policy, Plan or Programme. However, the strategic nature of policies, plans and programmes and SEA doesn´t allow a view of "post-decision" for this phase, mainly for the different decision levels involved on strategic decisions that lead to a dynamic follow-up (Partidário & Arts 2005). In fact, SEA follow-up stage can become nearly as complex as the original SEA (Cherp et al. 2006).

In contrast with EIA follow-up, on which the project assessment proponents usually undertake the project implementation, the actors in the implementation of a strategic initiative can, in some cases, differ from the proponents of a given policy or plan and respective SEA (Cherp et al. 2006). In these cases, where the "institutional ownership" of the SEA is not clear, the "SEA follow-up should be assured by specific organizational, communication and other arrangements" that can be accomplished, in some instances, by an EMS (Cherp et al. 2011, p. 526). Cherp et al. (2006, p. 209) address the link between SEA and EMS in the management component of the follow-up, which ensures that the follow-up and SEA recommendations are taken in account and translated into decisions and actions: "If the project-level EIA links with EMS for a company-developer, the SEA for public sector strategic initiatives may in principle be linked to EMS in public authorities". However, there is often a forgotten link between SEA, EIA and EMS, established at organisational level (Abaza et al. 2004).

2.4 Environmental Management Systems

Environmental management systems (EMS) are a voluntary set of processes and practices that help organizations achieve their environmental goals through systematic regulation of its operations (Stapleton et al. 2001; WRAP 2015). This type of instruments demand a clear commitment on continual environmental improvement for organizations, ensuring that not only improvements are made, but also the maintenance and monitoring of the system are guaranteed (WRAP 2015).

EMS implementation can help companies achieve some environmental, economic and operational benefits. Accessing EMS implementation case-studies in organisations, Morrow & Rondinelli (2002) found that this instrument can help companies integrate environmental, health and safety and quality management systems, improve employee environmental awareness and mitigates environmental impacts of their operation, with processes such as waste and emissions reduction, energy and water conservation and materials reuse. The relationship between EMS and financial performance is a widely addressed subject (e.g. Watson et al. 2004; Heras-Saizarbitoria et al. 2011; Lo et al. 2012; Feng et al. 2016) and generally it is established the existence of a positive correlation between them.

In the process of implementing an EMS, organizations can develop their own system or follow guidelines from specific standards for EMS. To achieve the maximum benefit of EMS, organizations pursue formal certification of the international standards, such as the ISO 14001:2015 certification or the registration on the Eco-Management and Audit Scheme (EMAS) from the European Commission, established on the Regulation (EC) 1221/ 2009. With this formal certification, companies not only enjoy environmental and economic savings, but also benefit from the image advantages to costumers and suppliers (WRAP 2015). Studying the real benefit from the certification of EMS, Melnyk et al. (2003) concluded that a formal EMS improves overall performance of organizations and contributes to increase the number of environmental related decisions taken. Moreover, Tung et al. (2014) claim that in order to achieve the true effectiveness of environmental management, organisations should involve top management in EMS, which is mandatory when pursuing formal EMS certification.

Despite EMS benefits, the implementation of this kind of instruments can face great challenges, specially in Small and Medium Enterprises (Hillary 2004). Issues like negative company culture towards the environment and scepticism of the benefits driven from environmental improvements can be internal barriers to the establishment of EMSs, while the lack of human and financial resources can lead to the interruption of the process when it is already on going (Hillary 2004).

EMS effects on organizations and in the environment can be stimulated by its integration with different instruments. For instance, Darnall et al. (2008) claim that EMS and Green Supply Chain Management can complement each other, making environmental improvements possible not only within the organization boundaries but also along their network of suppliers and costumers. Moreover, the authors defend that this environmental performance improvement throughout the supply chain will increase product quality and even reduce operational costs, representing a substantial enhancement for the organization itself.

As discussed in the previous section, another instrument that can be associated with EMS is Environmental Impact Assessment (EIA), which is a relatively well-documented issue in the literature (Eccleston & Smythe 2002; Marshall 2002; Sánchez & Hacking 2002; Abaza et al. 2004; DEAT 2004; Slinn et al. 2007; Hollands & Palframan 2014). Eccleston & Smythe (2002) argue that these two instruments can complement each other, and that taking an integrative approach can enhance their strengths and minimize their weaknesses. With this method the authors believe that “improvements in the long-term achievement and maintenance of environmental quality” (p.12) can be made. The two instruments are both needed as they intend to achieve different goals (Sánchez & Hacking 2002): while EIA is often mandatory and more focused on pre-approval planning, EMS is a voluntary way of enhancing efficiency and environmental adequacy in organizations with focus on continual improvement (Eccleston & Smythe 2002).

To achieve the real benefits from the association between EMS and EIA, empowering the strengths of both instruments, Eccleston & Smythe (2002) claim that the actors involved in this process

ought develop a well-though strategy for the integration of the two procedures. The framework developed by these authors shows the integration of EMS and EIA in all phases of the process – “Policy, Planning, Analysis, and Decision Making Phase”, “Implementation Phase” and “Monitoring and Improvement Phase” (p 10). With this strategy, Eccleston & Smythe (2002) argue that it is possible to combine the assessment of potential impacts, the up-front consideration of alternatives and public participation typical of EIA, and particularly related to the “Policy, Planning, Analysis, and Decision Making Phase”, with the EMS nature of continuous commitment, making decisions and acting for the preservation of the environment, particularly useful in the “Monitoring and Improvement Phase”.

EMS can also be seen as an extent of EIA, acting in sequence with this procedure (Slinn et al. 2007). In this perspective, since the EIA follow-up lacks rigour and is often neglected in many jurisdictions (Morrison-Saunders & Arts 2005), the integration of EMS on the follow-up stage of EIA is seen as a strategy to increase the potential of this instrument (Marshall 2005; Marshall et al. 2005), When these two instruments are linked in a follow-up perspective, they can have the ability to combine the EIA anticipatory assessment of environmental impacts with the continual management based on observed and monitored data of EMS (Marshall 2002).

Contrarily to the EIA-EMS link, the relation between EMS and SEA is a rather poorly documented subject. As mentioned in the previous section, Cherp et al. (2006) links SEA in public sector strategic initiatives to EMS applied in public authorities. With this approach, the effectiveness of EMS in enhancing communication and cooperation in public environmental management (Malmborg 2003) can be important for SEA, since “communication should be the central element of SEA follow-up if SEA aims to achieve strategic change for sustainable development” (Cherp et al. 2006, p. 210).

3 Methods

This research was developed in a mixed approach method, employing case study and content analysis. While case study can provide description for poorly known and contemporary phenomena (Eisenhardt 1989; Yin 1994), content analysis will allow to understand and retain information contained in the documents that represent the different stages of the decision-making hierarchy and assess how can SEA and EMS contribute to the inclusion of sustainability matters in them. In this research the Azores archipelago case study was used, explored through a qualitative and quantitative content analysis of selected documents that followed a specific criteria.

3.1 Azores Case Study

According to Yin (1994), case study is a research strategy that allows an investigation to retain the transversal and meaningful features of real events and can be particularly useful when the researcher has little control over events, especially when the phenomenon under study and its context boundaries are not clearly distinct. Eisenhardt (1989) claims that this research strategy can provide not only description of events, but also test and even generate theory. However, the author refers to building theory from case study has a highly iterative process, where the investigator may have to go backward and forward between steps, redefining and rebuilding segments of the research.

The different scales required to study the kind of relationship between different decision-making levels of the decision-making hierarchy makes this phenomenon well immersed on its context, where different levels can affect each other and where a lot of stakeholders are brought to action (Thérivel & Partidário 1996; Thérivel 2010). The transversal nature of the subject under investigation makes it well suitable for a case study approach.

Azores archipelago is a Portuguese autonomous region, effective on political, administrative, financial and patrimonial levels, but always under the Constitution of Portugal (Law 2/2009). This region has nine islands distributed in three groups: Corvo and Flores are in the Western group; Pico, Faial, S. Jorge, Terceira and Graciosa belong to the Central Group; and S. Miguel and Santa Maria make the Eastern Group (Figure 3.1).

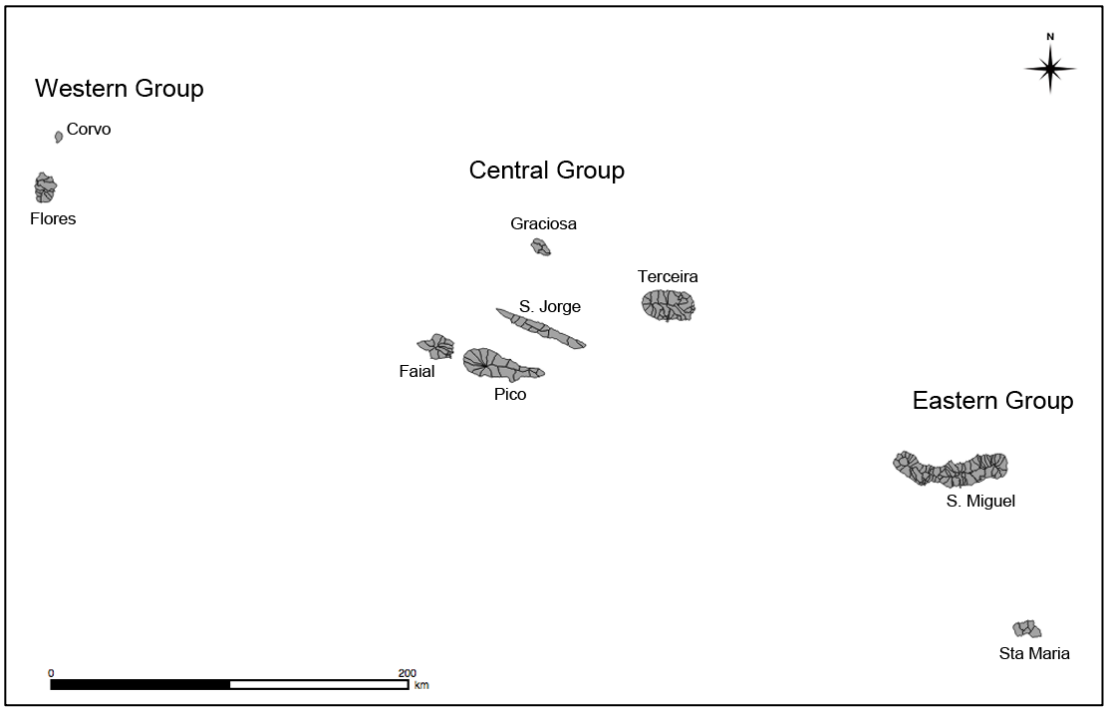

Figure 3.1 Official administrative boundaries of the Azores Archipelago (DGT 2015)

The Azores Islands stand in the center of the North Atlantic and are exposed to a number of tectonic structures that disclose the seismicity and volcanology verified in the region (França et al. 2005). In addition to the vast geologic patrimony that includes structures like volcanoes, caves and hot springs, 8047 species and sub-species are identified in the archipelago, 452 of them considered endemic (DRA et al. 2014). The protection of the biologic and natural assets of the Azores is assured by the established protection areas that cover 24 % of the archipelago territory (DRA et al. 2014).

In 2011, the Azores had 246 746 inhabitants, unevenly distributed by the total 2 322 km^2 of land area in its nine Islands, where S. Miguel alone represents 56% of the population and Corvo gathers only 0,17% of the population (SREA 2012). The demographic differences between islands are one of the biggest challenges for the Azores archipelago, making the governance authorities action extremely important for the reduction of disparities (RAA 2011).

The Azores GDP represents 2,15 % of the total Portugal's economy (SREA 2015a). The archipelago's economy relies on external income sources, whether they come from the central government or European Union funds. Internally, despite the primary sector decline over the years, Ponte (2010) refers to the dairy, meat and canning industries as the most important for the Azores economy. However, the author claims that the tertiary sector is the current main factor of development of the archipelago, naming tourism as a key activity for this purpose.

Tourism activity is seen today as a key sector for the Azores' economy (Regional Legislative Decree 38/2008/A). The first step for this activity in the archipelago occurred in the late 1800s with the

"Sociedade Propagadora de Notícias Micaelenses", which promoted the Azores in Portugal's mainland and in foreign countries (Ferreira 1999), but this sector has become a priority for the archipelago's economy only in recent years, playing a growing role in the Region's strategy for economic development (INTA 2011; RAA 2013). Since its early beginning, tourism activity in the Azores was closely linked to the environment, with Sete Cidades and Furnas being major points of interest for its natural and landscape values (Ferreira 1999). Nowadays, nature and environment continue to be seen as one of the main qualities of the region and as a key factor for tourism (Regional Legislative Decree 38/2008/A; RAA 2013; OTA 2016), making sustainability strategic and vastly important for this economic activity in the archipelago (Regional Legislative Decree 38/2008/A).

Tourism in Azores has evolved significantly in the past two decades, with the accommodation capacity in the region growing from 3939 bed places, in 1998, to 9725 bed places, in 2014 (SREA 2015b). In a similar tendency with other indicators such as nights spent and number of guests in the region, this indicator shows its biggest growth rate from 1998 to 2005, reaching 8438 guests capacity, and then stabilizes until 2012 (SREA 2015b), presumably due to the establishment of the international economic and financial crisis that disclosed a great impact in Portugal (EC 2014).

Recently, major breakthroughs were made on the Azorean tourism context, when the archipelago's airspace was liberalized and low-cost airlines started traveling to the Azores (Serafim 2015). In the first twelve months of operation under this new model, from April 2015 to March 2016, the number of guests in the Azores increased by 30 % when compared to the previous twelve months, from April 2014 to March 2015 (SREA 2015c; SREA 2016a; SREA 2016b). This data remains a good indicator for the tourism growth possibilities of the new airspace model for the Azores. However, the tourism paradigm will probably change as the region's tourism was extremely dependent of external agents – 90 % of visitors came through tour operators (INTA 2011).

3.2 Content Analysis

Content analysis can be described as a "process for systematically analyzing messages in any type of communication" (Kondracki et al. 2002, p. 224), whether it is written, oral or even visual. This method displays various designs and classifications depending on the author, but going through the literature it is possible to broadly classify content analysis as quantitative or qualitative (e.g. Kondracki et al. 2002; Rourke & Terry 2004; Hsieh & Shannon 2005; Elo & Kyngäs 2008; Elo et al. 2014). Elo & Kyngäs (2008) went further and classified content analysis as inductive, when concepts derivate from data in analysis, and deductive, when the data analysis is conducted by previous knowledge.

The two types of approaches do not have to be necessarily isolated. The combination of qualitative and quantitative methods in single studies cases is a widely discussed subject in literature (e.g. Greene et al. 1989; Creswell 1994; Foss & Ellefsen 2002; Brannen 2005; Teddlie & Tashakkori

2006). According to Foss & Ellefsen (2002, p. 247) the two approaches can complement each other, since “findings originating from different methods can (…) provide a richer and perhaps more authentic description of the issue under investigation”. In this research a combination of the two methods was used, with a strong emphasis on qualitative content analysis, complemented by a quantitative content analysis of the documents under study.

3.2.1 Document Selection

The selection of documents subjected to content analysis was done having in mind not only the objectives but also the context of this investigation. Tourism, being an important sector for small islands (Abeyratne 1999; Seetanah 2011), was chosen as the main link between these documents and guided the selection of organizations in study. The selection of documents undertook a bottom-up approach, starting with the selection of the organizations in study and succeeding to the documents related to them, within the context of the research and following specific criteria.

The document selection should start with the selection of organizations in the tourism sector, subjected to EIA process and with an implemented EMS, located in the main touristic islands and belonging to one of the main tourism groups in the archipelago (Figure 3.2). With the chosen organizations, the selection of documents proceeds to the Project Level documents associated to them, which in the context of this research refers to EIA documents. Finally, the Strategic Level documents associated with the designated organizations, either by territorial or sectorial appliance, should be added to the selected documents. This last group includes Regional and Local Plans and their SEA.

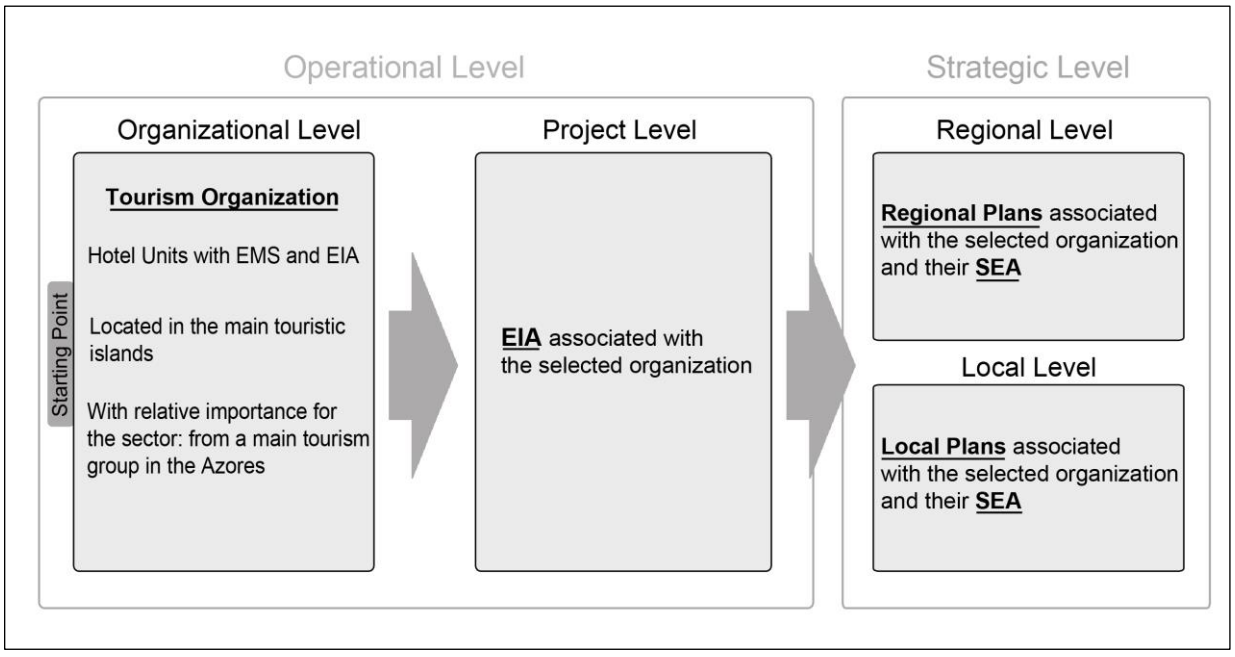

Figure 3.2 Framework for the selection of documents subjected to content analysis.
EIA - Environmental Impact Assessment; SEA - Strategic Environmental Assessment.

Representing 20 % of the region's accommodation units, the Bensaude Turismo group is the major hotel group in the Azores (Deloitte Consultores S.A. 2015). Two of the seven hotels of this group have an EMAS certified EMS implanted – Hotel Marina Atlântico (HMA) and Terceira Mar Hotel (TMH). HMA and TMH are located in S. Miguel and Terceira, respectively, which stand as the two islands with greater tourism attraction in the region, embodied by number of guests and accommodation capacity (SREA 2016a; SREA 2016b). These two hotel units, however, were not subjected to the EIA process, being excluded of mandatory EIA regime by the regional and national legislation (Regional Legislative Decree 30/2010/A; Decree-Law 151-B/2013). In fact, the vast majority of the hotel units in the Azores are not subjected to mandatory EIA, which sets a minimum of 200 beds for EIA application in the region (Regional Legislative Decree 30/2010/A). Therefore, HMA and TMH stand as the chosen organizations to undertake this research.

With the chosen organizations, and knowing that the Project Level documents are inexistent for HMA and TMH, the document selection proceeded to the Strategic Level documents, which are set as Regional Level and Local Level Documents. For the Regional Level documents, the sectorial and territorial boundaries of the organizations led to the selection of the Regional Land-use Plan for the Autonomous Region of the Azores[1] (PROTA) and the Tourism Management Plan for the Autonomous Region of the Azores[2] (POTRAA), effective on all of the Azores archipelago territory and in the tourism economic sector. The territorial boundaries of the selected organizations set the Local Level documents: HMA, located on Ponta Delgada, led to the selection of the Land-use Plan of Ponta Delgada[3] (PDM of Ponta Delgada); and TMH, located in Angra do Heroísmo, led to the selection of the Land-use Plan of Angra do Heroísmo[4] (PDM of Angra do Heroísmo). From all of the Strategic Level documents, only PROTA was subjected to SEA process, which remains a limitation for this research method.

Figure 3.3 resumes the selected documents and presents the relationship between them: the Regional Level documents provide recommendations to all of the other documents under study and represent the most strategic level of decision-making hierarchy; the Local Level documents must apply the proposals made by the Regional Level documents and present recommendations to the subsequent documents; and the Organizational Level documents**,** included on the Operational Level of the hierarchy, should integrate the recommendations of the higher level documents.

[1] Directly translated from "Plano Regional de Ordenamento do Território para a Região Autónoma dos Açores" – PROTA

[2] Directly translated from "Plano de Ordenamento Turístico da Região Autónoma dos Açores" - POTRAA

[3] Directly translated from "Plano Director Municipal de Ponta Delgada" – PDM Ponta Delgada

[4] Directly translated from "Plano Director Municipal de Angra do Heroísmo" - PDM Angra do Heroísmo

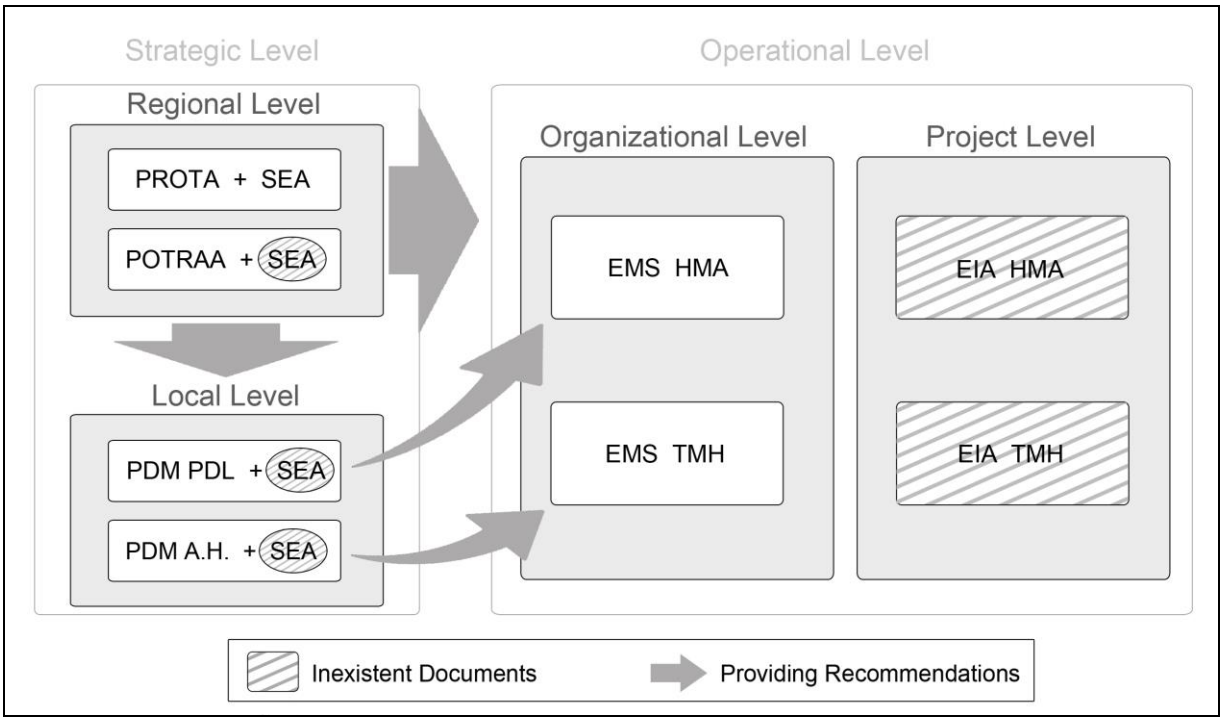

Figure 3.3 Documents under content analysis and their relationship.
PROTA - Regional Land-use Plan for the Autonomous Region of the Azores; POTRAA - Tourism Management Plan for the Autonomous Region of the Azores; PDM PDL - Land-use Plan of Ponta Delgada; PDM A.H. - Land-use Plan of Angra do Heroísmo; SEA – Strategic Environmental Assessment; EMS HMA – Environmental Management System Hotel Marina Atlântico; EMS TMH – Environmental Management System Terceira Mar Hotel; EIA HMA – Environmental Impact Assessment Hotel Marina Atlântico; EIA TMH – Environmental Impact Assessment Terceira Mar Hotel.

Table 3.1 gathers information on the documents under study. With this table it is possible to understand the mission and the main objectives for each plan or instrument, alongside with the documents that represent them. Instruments like SEA, EIA and EMS are embodied by different documents and not all of them were considered in this research. While Project Level documents and the SEA of POTRAA, PDM of Ponta Delgada and PDM of Angra do Heroísmo are inexistent, not all of the documents that embody the EMS of TMH and HMA are available.

Table 3.1 Characterization of the documents under study and their objectives.

<table>
<tr><th>Document</th><th colspan="2">Document's Objectives</th></tr>
<tr><td>Regional Land-use Plan for the Autonomous Region of the Azores (PROTA)

Approved on the Regional Legislative Decree 26/2010/A and defines the major guidelines for the region's territorial planning, having the economic, social and environmental development of the Azores as ultimate goal.</td><td>Strategic objectives (SRAM - DROTRH, 2008a, p 5-6):

- "Define the regional territorial planning strategy;
- Guide the compatibility between different sector policies.
- Introduce planning and integrate management of coastal areas, having in account human occupation, existing ecological values and existing risks;
- Contribute to the mitigation of development asymmetries between islands;
- Promote territory structuring with the definition of its urban system, infrastructure and equipment network, assuring the equity of access to the general population;
- Valorize the landscape and the cultural and natural patrimony as identity elements for the region;
- Reinforce the participation of stakeholders."</td><td>The strategic vision that supports the territorial model of PROTA aims for the development and differentiation of the Azores in national and European context and establishes a set of future goals for the archipelago. On the context of this investigation, the most important future objectives for the Azores in 2016 are (SRAM - DROTRH, 2008a, p 19-22):

- "Making the region a space of scientific and technological excellence in insularity, maritime, and sustainability domains;"
- "A reference tourist destination, in the domains of rural tourism, nature tourism, discovery tourism and golf, with additional regional value;"
- "A region with high levels of energetic self-sufficiency and security;"
- "A pioneer region in the promotion of accessibility and mobility models adjusted to the minimization of territorial fragmentation and insularity and to the protection of environmental and landscape sustainability."</td></tr>
<tr><td>Strategic Environmental Assessment of PROTA (SEA PROTA)

SEA PROTA was conducted by the Secretaria Regional do Ambiente e do Mar – Direcção Regional do Ordenamento do Território e dos Recursos Hídricos and it is dated of 12 October 2008. The selected document under content analysis representing SEA PROTA is the Environmental Report.</td><td colspan="2">The main objectives for the realization of this SEA are (SRAM - DROTRH, 2008b, p 2):

- "Ensure that the environmental dimension is part of the strategic vision for the Azores;
- Ensure the integration of environmental matters in the decision process, since the early phases of planning;
- Identify, select and justify win-win situations;
- Propose strategic management and monitoring programmes;
- Ensure a clear and effective consulting and participation process for the stakeholders;
- Produce adequate contexts for the future development proposals."</td></tr>
<tr><td>Tourism Management Plan for the Autonomous Region of the Azores (POTRAA)

Established on the Regional Legislative Decree 38/2008/A, POTRAA delineates the strategy for the sustainable development of tourism in the Azores and defines the territorial model to achieve it.</td><td colspan="2">The plan sets as its main objective (Regional Legislative Decree 38/2008/A, p. 5423)

"Development and affirmation of a sustainable tourism sector, that allows the economic development, the protection of the natural and human environment and contributes to the insular territorial planning and for the attenuation of disparity of the different areas of the region."

To achieve the strategic vision set for the Azores tourism sector, POTRAA aims for the development of a competitive touristic system in the region, minding its natural, human and economic characteristics, the expansion of tourism avoiding conflicts with other territory functions and uses, and assuring the development of tourism according to each islands' capacity and opportunities (Decreto Legislativo Regional nº 38/2008/A, de 11 de Agosto de 2008).</td></tr>
</table>

Land-use Plan of Ponta Delgada (PDM Ponta Delgada) The Revision of the PDM of Ponta Delgada is set on the Regional Regulatory Decree 16/2007/A and establishes the spatial structure model for Ponta Delgada County.	The **general objectives** set for this plan are (Regional Regulatory Decree 16/2007/A, p. 5227) : - *"To give territorial expression to the local development strategy, promoting action models based on the balance between public and private initiatives (…);* - *Articulate the local incidence sector policies;* - *Defining rules for territorial transformation and management, regarding sustainability principles and intergenerational solidarity, rational use of natural and cultural resources, and right pondering of public and private interests and equity guaranty".*
Land-use Plan of Angra do Heroísmo (PDM Angra do Heroísmo) The PDM of Angra do Heroísmo is set on the Regional Regulatory Decree 38/2004/A and establishes the general lines for territorial planning and management, effective in all Angra do Heroísmo County area.	The **general objectives** set for this plan are (Regional Regulatory Decree 38/2004/A, p. 6706): - *"Accomplish a territorial planning policy that gathers conditions for a balanced socioeconomic development;* - *Ensure a rational use of natural resources;* - *Ensure the preservation, protection and improvement of environmental quality;* - *Ensure the protection and valorization of the cultural and natural patrimony;* - *Promote the integrated valorization of territory differences."*
Environmental Management System of Hotel Marina Atlântico (EMS HMA) The selected documents under content analysis representing EMS Hotel Marina Atlântico are the Environmental Policy (2010), the Environmental Statement (2012) and the Mid-Term Environmental Statement (2013).	Bensaude Turismo's Hotel Marina Atlântico is a four star hotel located on the main shoreline avenue of Ponta Delgada, with 184 rooms and services like restaurant, bar, swimming pool, health club and spa. This hotel unit implemented an EMAS certified Environmental Management System in 2006, with the issue of its Initial Environmental Statement in the same year. Later, in 2012, the registration of this EMS was integrated with another hotel in the same group, the Terceira Mar Hotel.
Environmental Management System of Terceira Mar Hotel (EMS TMH) The selected documents under content analysis representing EMS Terceira Mar Hotel are the Environmental Policy (2010), the Initial Environmental Statement (2012) and the Mid-Term Environmental Statement (2013).	Terceira Mar Hotel is a four star resort hotel of the Bensaude Turismo group located on the shoreline of Angra do Heroísmo, with 139 rooms and services like restaurant, bar, swimming pool and health club. In 2003 an EMAS certified Environmental Management System was implemented in this organization, issuing the Initial Environmental Statement in the next year. Later, in 2012, the registration of this EMS was integrated with another hotel in the same group, the Hotel Marina Atlântico.

3.2.2 Content Analysis Approach

In this research, the documents under content analysis were examined throughout a qualitative approach and complemented with a quantitative method of analysis. The qualitative content analysis was accomplished in two stages, starting with an inductive and qualitative content analysis, based on an open-coding method – where notes are taken while reading the documents (Elo & Kyngäs 2008) –, making possible to create a general sense of the documents under study and generate a framework that would guide the following research. Deductive qualitative content analysis was subsequently used, where the established framework, structured in three matrices (see Annexes I, II and III), each one regarding one of the document classes that represent the different levels of the decision-making hierarchy, guided the analysis.

The documents under study represent the decision-making hierarchy and are gathered in three levels (Fig 3.3). As mentioned in the previous section, the Organizational Level documents should include the recommendations from both Local and Regional Level documents, and the Local Level documents ought integrate the recommendations given by the Regional Level documents, establishing a chain of hierarchy. To study the relationship between the different classes of documents, a framework with three matrixes – one for each group of documents – was established. In each of these matrixes information from the documents is gathered, minding key subjects, such as sustainability and tourism, and key factors, like territorial appliance, for this research. Comparing the information between the different groups of documents, representing the different levels of the decision-making hierarchy, allowed us to understand if each document contemplates recommendations from higher level documents in the decision-making hierarchy.

Complementing the qualitative approach, a quantitative content analysis was accomplished, aiming to understand if sustainability matters were directly included on the documents that represent the different levels of the decision-making hierarchy. Four sustainability related expressions were quantified on the documents under study: “Sustainability”, “Sustainable”, “Sustainable Development” and “Sustainable Tourism”. These expressions were chosen having tourism and sustainability as key aspects for this research. However, this analysis stands as a simplistic approach on assessing the integration of sustainability in the documents under study, remaining merely a complement on the quantitative content analysis. Further research should include a wider range of expressions, including terms linked with the different domains in sustainability – economy, environment and society.

This research method gathers two types of limitations. On the one hand, there are limitations related to the methodological approach, which remain intrinsic limitations to the methods used: case study and content analysis. This group of limitations gathers challenges like the difficulty of a single case study to provide a generalizing conclusion (Tellis 1997) or the dependency on the availability and quality of data and the subjectivity intrinsic to the researcher typical of content analysis (Elo et al. 2014). On the other hand, the availability of instruments and documents pose as limitations inherent to this specific

research, meaning that this type of limitations can be suppressed in future research. As mentioned in the previous section, instruments like the EIA of the organizations under study and the SEA of most of the plans were not available for content analysis in this research.

4 Results

In this section the main findings are presented and explored for each document analyzed. The results are presented for the qualitative content analysis, which was accomplished in three matrices that allowed the comparison between the different classes of documents (Annexes I, II and III), followed by a complementary quantitative content analysis.

4.1 Regional Level Documents

Regional Land-use Plan for the Autonomous Region of the Azores (**PROTA**)

Sustainability issues are clearly included on the general objectives and in the vision that supports the plan, often directly. All along the body of the document, especially on the recommendations for the accomplishment of the proposed territorial model, which should be applied in the subsequent plans of the decision-making hierarchy, the inclusion of sustainability matters is also present.

In the context of his investigation two types of recommendations for tourism were considered: the ones directly linked to tourism and the ones aimed for general sectors and organizations, which will indirectly affect tourism. Both types of recommendations include some sustainability good practices such as aiming for energetic efficiency, monitoring and implementing environmental certification schemes – which was one of the criteria for the selection of organizations in study. The articulation among Territorial Management Instruments is explicitly addressed in this document since PROTA delegates its tourism strategy to POTRAA and there are recommendations directly aimed for Municipal Land-use Plans[5] (PMOT), which are consequently applicable for PDMs.

The gathered recommendations for the islands of S. Miguel and Terceira, applicable in the PDMs of Ponta Delgada and Angra do Heroísmo, respectively, contain sustainability related concepts, despite not including the three dimensions of sustainability – economy, society and environment. The urban valorization, the goal of energetic self-sufficiency by implementing renewable energy sources and the valorization of cultural landscapes are some of the recommendations common to both islands. Specifically for S. Miguel, the minimization of environmental impacts and the recuperation of the unoccupied housing stock are important recommendations. In regard to Terceira, the promotion of public transport between its two cities is the one if the highlighted proposals. Alongside with the recommendations for each island, PROTA also provides recommendations for the general PMOTs in the region, which should be applied in the PDMs in study. In this last type of recommendations, the promotion of agricultural soil preservation, the landscape integration of new land-uses and the integration of territorial planning principles that promote the environmental protection and valorization are the underlined proposals.

[5] Directly translated from “Planos Municipais de Ordenamento do Território” -PMOT

As regard for the complementary quantitative content analysis of PROTA, the results show that in the 256 pages of its two volumes, 120 sustainability related expressions were found. These sustainability related expressions were expressed in 61 existences of “Sustainability”, 42 of “Sustainable”, 15 of “Sustainable Development” and two of “Sustainable Tourism”.

Strategic Environmental Assessment of PROTA (SEA PROTA)

The general objectives of SEA PROTA do not aim directly for sustainability on all of its domains – environment, economy and society. The environmental concerns are the ones given special attention, which could be justified by the narrow understanding of this instrument: SEA aims to “provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes (…)” (Directive 2001/42/EC, p. 32). However, in the same article it is stated that the ultimate purpose of SEA is to promote sustainable development and although there are no direct references to sustainability in the general objectives of SEA PROTA, the body of the document shows that this type of concerns exist and, in many cases, are explicit.

Given the nature of SEA, the sustainability recommendations of the SEA PROTA are strongly linked to the recommendations contained on PROTA itself. However, the recommendations contained on the evaluation instrument can, in some cases, go further than the ones in PROTA. In the same line with the content analysis of PROTA, the considered recommendations not only referred directly to sustainability and its domains, but also to concepts that promoted sustainability, such as energy efficiency or public participation.

The recommendations aimed directly for S. Miguel and Terceira islands included in the SEA of PROTA, and consequently applicable for the PDMs of Ponta Delgada and Angra do Heroísmo, were in line with the ones contained in PROTA. However, comparing with the plan, the SEA provides further recommendations regarding sustainability, such as the articulation between the potential for biodiversity conservation and agricultural systems, allowing the articulation between agricultural and environmental systems, and the integration of EMS in technological parks. The general recommendations applicable for PMOTs contained in the SEA are not directly linked to any recommendation of PROTA in particular. Nonetheless, the SEA overcomes the plan and provides more sustainability related recommendations, like the periodical evaluation on ecological, social, physic and economic carrying capacity on territorial units.

For tourism-related sustainability proposals two kinds of recommendations were considered in the SEA: the ones directly aimed for tourism and the ones generally applicable to any sector of activity. Both type of recommendations in SEA tend to integrate sustainability in tourism practice, whether they aim simultaneously for all sustainability domains, like the promotion of certification of tourism products and

services considering economic, environmental and social aspects, or aim specifically for one of these domains, such as the use of environmental sustainability as an essential criteria for project approval.

The complementary quantitative content analysis of SEA PROTA found a total of 256 sustainability related expressions in the 146 pages of the document under analysis - the Environmental Report. This number of sustainability related expressions was distributed in 105 existences of "Sustainability", 98 of "Sustainable", 52 of "Sustainable Development" and one of "Sustainable Tourism".

Tourism Management Plan for the Autonomous Region of the Azores (POTRAA)

The scenario that sets the starting point for this plan predicts the tourism accommodation capacity for the Azores in 2015. This projection is based on "rates that are sufficiently high to allow the affirmation of the regional tourism sector, but not high enough for contributing to the massification and degradation of tourism (…)" (Regional Legislative Decree 38/2008/A, p. 5445) although there are no explicit criteria set for the region's carrying capacity. Moreover, despite being overestimated when compared to the actual tourism accommodation capacity in 2015 (Regional Legislative Decree 38/2008/A; SREA 2016a), the projections made on the plan are exactly the same as the defined touristic carrying capacity, which could compromise the region in a scenario where tourism continued growing after 2015. This scenario does not stand clearly in line with one of the main goals for POTRAA: the achievement of a sustainable tourism for the Azores. In fact, in this plan the sustainability-related recommendations are largely outnumbered when compared to the ones related to economy, with the main objective of promoting and increasing the Azorean Tourism.

The recommendations included in POTRAA and aimed for PMOTs - applicable to the PDMs in study – should have, at first sight, an important spatial component, with the definition of Urban Areas of Eventual Tourism Development, Specific Areas with Touristic Vocation, Rural Areas and Others Not Differentiate and Highly Sensitive Ecologic Areas [6]. In fact, "what matters in the plan is to identify the areas with aptitude for tourism and the areas undesirable for tourism expansion" POTRAA (Regional Legislative Decree 38/2008/A, p. 5437). However, in the page 5447 of the document it is stated that "the plan and the territorial organization units it defines, only aims to the construction of a strategic and guiding base in the elaboration or revision of PMOTs (…), not having the strictness of physical delimitations of cartography", meaning that the defined areas don't have to be strictly applied. Thus, the spatial component of the plan remains a rather indicative tool, being its transposition for subsequent plans unreasonable to access.

In addiction to the recommendations of spatial nature, the PMOTs can also be affected by some actions included in the Plan of Intervention (see Regional Legislative Decree 38/2008/A, section B). In

[6] Directly translated from "Espaços Urbanos de Eventual Desenvolvimento Turístico", "Espaços Específicos de Vocação Turística", "Espaços Rurais e Outros Não Diferenciados" and "Espaços Ecológicos de Maior Sensibilidade", respectively.

many cases, these are not directly aimed for PMOTs but can be applied to them in principle. In this section there are actions that include some sustainability concepts such as the support for the integration of tourism practices that embody the region's environmental values, and the support for the creation of tourism products that represent the environmental and human values of the Azores.

Due to its nature, all recommendations in POTRAA ultimately aim to organize and promote tourism and present a more operational nature. The tourism recommendations were based on the specific objectives of the plan and the Strategic Development Lines[7], and the measures and actions preconized to achieve them. Although sustainability is the baseline for the major objective of the plan the integration of sustainability in these objectives, development lines and actions could be stronger. For instance, in the "Measure 3.2 – Support for the creation and development of touristic products with differentiating capacity" (Regional Legislative Decree 38/2008/A of 11 August (Decreto Legislativo Regional nº 38/2008/A, p. 5432) there are no actions that promote a sustainable tourism for the Azores.

The quantitative content analysis on POTRAA, which stood as a complement for the qualitative content analysis, shown that this plan gathers 26 of the selected sustainability related expressions. In its 38 pages, these sustainability expressions are distributed in 18 occurrences of the expression "Sustainability", four of "Sustainable", one of "Sustainable Development" and three of "Sustainable Tourism".

4.2 Local Level Documents

Land-use Plan of Ponta Delgada (PDM of Ponta Delgada)

The PDM of Ponta Delgada shows a clear intention of aiming for sustainability, not only for the direct reference on the plan's objectives, but also for the integration of all dimensions of sustainability - economy, society and environment - on the definition of the local development strategy. However, the strategic lines set to support the local development strategy are shown separately for each of the sustainability dimension, which anticipates a desegregate approach for sustainability in the body of the document.

The nature of this type of plans, which essentially set rules on land-use management aimed for public and private entities, makes the inclusion of sustainability on all of its domains tougher when comparing to wider aimed plans. Nevertheless, the PDM of Ponta Delgada includes some sustainability concepts, such as the inclusion of economy, social and environmental aspects on some of the objectives set for the Planning and Management Operative Units[8] (Regional Regulatory Decree 16/2007/A, p. 5251-5258).

[7] Directly translated from "Linhas de Estratégicas de Desenvolvimento".

[8] Directly translated from "Unidades Operativas de Planeamento e Gestão".

Specifically for the tourism sector, the integration of sustainability concerns occurs in a disaggregated and often indirect approach. This inclusion was made on three different methods. The first one is restricting the constructive standards and location for touristic buildings and areas, which could be done minding sustainability patterns. The second one is to give priority to touristic usages for some areas, which can imply economic, environmental and even social concerns. The last strategy used to integrate sustainability in tourism practices was to include some sustainable tourism concepts, such as the promotion of rehabilitation of historic buildings for touristic purposes.

As regard for the complementary quantitative content analysis of PDM PDL, the results display two sustainability related expressions included on the 39 pages of the document. In this document only one of the selected sustainability related expressions was found – "Sustainability" – meaning that no existences of "Sustainable", "Sustainable Development" and "Sustainable Tourism" were found.

Land-use Plan of Angra do Heroísmo (PDM Angra do Heroísmo)

The objectives set for the PDM Angra do Heroísmo include the integration of sustainability on its domains, having economic, social and environmental matters in concern. Since the mission for this plan it is not explicitly set, it is possible to infer from these objectives that there is an integration of sustainability on its domains in the plan's mission. In the body of the document however, the integration of sustainability is absent, with all of its domains emerging completely disaggregate.

PDM Angra do Heroísmo does not specify strategic lines for the development of the territorial planning. Instead, we have to infer this information from an extensive analysis of the document. This analysis led to the conclusion that, overall, there is not a strategic approach as regard to the inclusion of sustainability matters in PDM Angra do Heroísmo. The three dimensions of sustainability – economy, society and environment – are present in an isolated approach, which can hamper the implementation of a vision of sustainable development for the territory. The intrinsic nature of this type of instruments contributes to this result, as PDMs aims to set rules for land-use management.

As regard for the recommendations made for tourism economic sector, this plan shows close to none sustainability considerations. The only reference on this matter is the inclusion of constructive limitations on touristic developments located in agricultural or forest areas, which can indicate some concerns for sustainability.

The complementary quantitative content analysis on the PDM Angra do Heroísmo found no sustainability related expression in the 18 pages of this document. The selected sustainability related expressions selected for this research were "Sustainability", "Sustainable", "Sustainable Development" and "Sustainable Tourism".

4.3 Organizational Level Documents

Environmental Management System of Hotel Marina Atlântico (**EMS HMA**)

The Environmental Policy of the EMS HMA aims for the enhancement of the organization's environmental performance, alongside with the delivery of a quality service, but also shows the intent of promoting good environmental practices on clients, staff, suppliers and society in general. This organization also shows sustainability concerns as they wish to contribute to the regional ecological aware and promote a cleaner and safer future, with increased life quality.

Then annual Environmental Statements under content analysis show the environmental performance of HMA and the proposed objectives and targets for the future. These documents display no clear integration of all sustainability domains simultaneously. The majority of the proposed objectives and its goals are aimed for the environmental improvement of the organization, such as the reduction of potable water consumption or the reduction of waste production, which is understandable regarding the intrinsic nature of this instrument, aimed for the enhancement of organization's environmental performance (European Union, 2013). Nevertheless, there are some objectives with social concerns such as the promotion of the connection with the local community.

The quantitative content analysis on EMS HMA, which stood as a complement for the qualitative content analysis, shown that this plan gathers two existences of the selected sustainability related expressions in its 57 pages, distributed on the three documents that represent this EMS in this research – Environmental Policy (2010), Environmental Statement (2012) and Mid-Term Environmental Statement (2013). These two sustainability related expressions were embodied by the term "Sustainable", meaning that no occurrences of "Sustainability", "Sustainable Development" and "Sustainable Tourism" were found.

Environmental Management System of Terceira Mar Hotel (**EMS TMH**)

The reduced integration of sustainability matters in EMS Terceira Mar Hotel was expected since the main objective of EMAS Environmental Management Systems in tourism is the improvement of organization's environmental performance (European Union, 2013), undervaluing the social and economic dimensions of sustainability.

The Environmental Policy of EMS TMH aims for the excellence and quality of the EMS and promotes the sustainable use of natural resources, optimizing its consumption and reducing waste production. The relationship with the local community is seen as a priority by the organization as they intent to create an expanding sustainable community.

The Environmental Statements of EMS TMH show the environmental performance of the organization, the proposed objectives and measures in the EMS and its results. There is no clear integration of all of the sustainability domains simultaneously in these documents, being the majority of

the proposed objectives and its goals aimed for the environmental improvement of the organization, such as the reduction of potable water consumption or the use of recyclable paper. Nevertheless, there are some objectives with social concerns such as the promotion of the connection with the local community.

The complementary qualitative content analysis on EMS TMH found that, in the 57 pages of the documents that represent this EMS in this research – Environmental Policy (2010), Environmental Statement (2012) and Mid-Term Environmental Statement (2013) - only the term “Sustainable” was found with two existences. The other sustainability related expressions - Sustainability”, “Sustainable Development” and “Sustainable Tourism” – were absent in this document.

5 Discussion

Despite being primarily aimed for the integration of environmental concerns in plans and programmes, SEA is seen as a tool to achieve sustainable development (Wood & Dejeddour 1992; Shepherd & Ortolano 1996; Directive 2001/42/EC; Vicente & Partidário 2006). Moreover, Shepherd & Ortolano (1996) claim that an opportune SEA can contribute to a sustainable development approach in the planning process. The results of this research show that the SEA of PROTA was conducted during the preparation of the plan, which allowed the integration of SEA's recommendations on the final document, as it is suggested on the Directive 2001/42/EC. However, some of the recommendations included in the SEA were not directly included in PROTA. Some tourism recommendations for example, are presented in different forms, being indirectly applied to the sector. Nevertheless, the conducted qualitative and quantitative content analysis show that the SEA of PROTA played a crucial role in the implementation of sustainability issues in the plan.

According to the Decree-Law 380/99 the Sector Plans – POTRAA in this research context - should consider plans, programmes and projects in its scope, that already exist or are in preparation, and guarantee the necessary compatibilities with them. However, due to the time gap between POTRAA and POTRAA, there is no strict relation of precedence between the Regional Level plans under content analysis. Nonetheless, the two documents are linked since PROTA delivers its tourism sector strategy to POTRAA. Still, PROTA goes further than POTRAA and provides more recommendations that promote sustainability for tourism activity, such as the incentive for the implementation of environmental certification schemes or the use of energy efficiency as a criteria for the evaluation of new projects.

In this research the Local Levels documents, which can be classified as Municipal Land-use Plans, should develop and implement the guidelines defined on Regional Level documents (Law 31/2014). The PDM Ponta Delgada shows some integration of the recommendations given by the plans under study that belong to higher level of the decision-making hierarchy. Recommendations from PROTA and its SEA, like the landscape integration along the shoreline, the promotion of social housing and the promotion of cultural landscapes are included in this document with actions that promote the restoration of coastal landscapes, with special construction regimes for social housing and with the promotion of the construction of greenhouses and hand-built rock walls on cultural areas. The inclusion of issues like the preservation and valorization of built patrimony for touristic purposes and support for the maintenance of traditions, included in POTRAA, were also accomplished in PDM Ponta Delgada.

However, the majority of recommendations from the Regional Level documents are not included in this plan. Some of these recommendations are poorly addressed on PDM Ponta Delgada, such as the discourage of disperse settlement and second housing or the promotion of rehabilitation and improvement of existing infrastructure, but other issues like energetic efficiency, landscape integration in new renewable energy facilities or the promotion of base studies for tourism products are completely absent in this document.

PDM Angra do Heroísmo fails to integrate most of the recommendations from the higher level plans in study. Recommendations included in POTRAA like the promotion of historic and built patrimony in a tourism perspective, the promotion of eco labels in tourism and raising population awareness for the significance of tourism for local development are not addressed at all in this document. From PROTA and its SEA there are also a number of unaddressed recommendations, such as the promotion of public space in rural and urban areas, the discourage of disperse settlement or the landscape integration in new renewable energy facilities. Nevertheless, some recommendations from the Regional Level documents were included. From PROTA and its SEA, PDM Angra do Heroísmo included subjects like the support for social housing and the protection of areas for environmental preservation. Recommendations like the support for rural tourism and preservation of traditions likely to give identity to the destination Azores were included from POTRAA.

The majority of sustainability related recommendations in the analyzed SEA and plans applied by the EMS HMA tend to be related to environmental issues, undervaluing the social and economic dimensions of sustainability. Following these recommendations, the EMS of Marina Atlântico Hotel contributes to the rationalization of resources, energy efficiency and waste reduction, and promotes the population awareness on the importance of environmental matters for tourism. Moreover, the EMS itself can be seen as an implemented recommendation from PROTA, as it promotes the implementation of environmental certification schemes. These results remain in line with the main goal for EMAS (Eco-Management and Audit Scheme) EMS in tourism sector, set by EU (2013), which stands as the enhancement of the organization's environmental performance. This objective, focused on environmental aspects only, can lead to the lack of integration of sustainability matters on all of its domains – environment, economy and society – in these procedures.

Unsurprisingly, the EMS TMH application of recommendations given by higher level documents was also based mainly on environmental-driven recommendations. In agreement with these recommendations, the EMS of Terceira Mar Hotel promotes good waste management practices, energy efficiency and rationalization of resources, at the same time it promotes the population awareness for the importance of environmental matters for tourism. For the same reasons as EMS HMA, this EMS itself can also be seen as an implemented recommendation from PROTA.

In agreement with the qualitative content analysis, the quantitative content analysis reveals a tendency in references to sustainability amongst the three levels of documents in study, suggesting that sustainability integration decreases from the Regional Level to the Local and Organizational Levels. This tendency can be influenced not only by the type and nature of documents in each class, but also by the land-use planning system itself. On the one hand, the closer the document is to the Organizational Level the more operational it gets (OECD 2006), which can make the integration of sustainability harder. On the other hand, Encarnação (2010) refers to the fragmentation and lack of articulation between existing plans as a dysfunction of the Portuguese land-use planning system, which Drago (2013) claims that remains a

barrier to effective land-use planning, obstructing the spread of sustainability concerns along the decision-making hierarchy.

Alongside with the lack of articulation between different levels of the decision-making hierarchy, the articulation between SEA and EMS in this research context remains inexistent. Despite addressing the link between EMS and SEA in a public authorities perspective, Cherp et al. (2006) recognizes the importance of communication in SEA follow-up. At the same time, Malmborg (2003) distinguishes the potential for enhancing communication and cooperation of EMS, making communication a potential link between these two instruments.

The application of SEA, which contributed to the implementation of sustainability concerns on PROTA, in all documents of the Strategic Level of the decision-making hierarchy, could have the ability to promote a wider spread of sustainability in these boundaries. Moreover, the implementation of EIA in the Project Level of the studied decision-making hierarchy might, in integration with the application of SEA, facilitate the integration of relevant environmental – and possibly sustainability related - issues in the decision-making hierarchy, as claimed by Sadler (1996) when addressing the potential of integration between SEA and project EIA. The inclusion of EMS, which is referred as an instrument with the ability to strengthen EIA's potential (Eccleston & Smythe 2002), in organizations and public authorities could empower the link between EIA and SEA in the decision-making hierarchy, promoting a perspective of communication and articulation between instruments.

6 Conclusions

A qualitative and quantitative content analysis on the selected documents revealed that despite being primarily aimed for the integration of environmental issues in plans and programmes, SEA stands as a major contributor for the integration of sustainability in these instruments, and consequently in strategic levels of decision-making. On the other end of the decision-making hierarchy, in agreement with literature on the subject, EMS revealed to be driven towards environmental concerns, undervaluing the other domains of sustainability – economy and society.

This research also found that the documents under content analysis do not strictly integrate recommendations provided by the higher levels of the decision-making hierarchy, meaning that planning processes should be rethinked and improved. The strategic documents closer to the organizations level – in this research represented in the Local Level documents – present recommendations with great emphasis on land-use requirements and construction standards, leaving a gap between planning instruments and operational procedures of organizations. On the other hand, these documents fail to integrate the majority of recommendations contained in the Regional Level documents, revealing a fracture in the decision-making hierarchy between Strategic and Organizational Levels of the decision-making hierarchy.

Different decision-making hierarchy levels reveal different levels of sustainability integration. Both quantitative and qualitative content analysis on the documents under study show a clear tendency for a greater inclusion of sustainability issues in the documents closer to the Strategic Level, while the documents closer to the Organizational Level tend to disregard the inclusion of sustainability matters in their procedures. The lack of articulation between existing plans can contribute to this finding, and a greater articulation between SEA in the different levels of decision-making, EIA in Project Level and EMS in Organizational Level could support the minimization of this effect.

Despite the limitations driven by its exploratory nature, this research led to remarkable conclusions that can and should be further explored through investigation in different contexts and regarding bigger samples. In the Azores archipelago context, further research can be proceeded with more plans subjected to SEA process in different levels of the decision-making hierarchy, such as the Land-use Plan of Vila do Porto[9] or the Land-use Plan of the Coastal Area of Santa Maria Island[10]. A case study with existing EIA procedures at the Project Level of the decision-making hierarchy should also be pursued.

[9] Directly translated from Plano Director Municipal de Vila do Porto.

[10] Directly translated from Plano de Ordenamento da Orla Costeira da Ilha de Santa Maria.

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8 Annexes

Annex I - Regional Documents Content Analysis

Recommendations aimed for S. Miguel (Ponta Delgada)

PROTA	SEA PROTA	POTRAA
Promote the urban dynamization and valorization of Ponta Delgada through a Urbanization Plan. (VII ,p82, III.8.1.) Provide urban land grants for public promotion of social housing . (VII, p82, III.8.2.) Enhance the recovery of vacant housing stock, combining it with the construction from scratch to meet the predicted housing demand. (pVII, p82, III.8.3.) Increase energy self-sufficiency levels through the development of energy production from hydric, wind and geothermal sources. (VII, p83, III.8.9.) Prioritize the promotion actions of cultural landscapes defined in the territorial model. (VII, p83, III.8.12.) Minimize the environmental and landscape impacts of soil extraction sites. (VII, p83, III.8.13.) Assure the establishment of buffer areas for the geothermal energy production facility. (VII, p83, III.8.14.)	The areas of urban expansion and touristic developments should be carefully managed and monitored, being aware of S. Miguel's territorial carrying capacity. The environmental and landscape integration is vital on secondary urban areas along the shoreline. (p94) Assure territorial compatibility on new location or extension of existing infrastructures, avoiding conflicts of use and assuring the proposal and evaluation of alternative development strategies and options in plans after PROTA. Projects should integrate the mandatory environmental assessment and management procedures. (p94) Negative environmental impacts should be considered on the implementation of renewable energy facilities, along with the application of mandatory environmental assessment and management procedures. (p95) The potential for biodiversity conservation associated with agricultural systems should be explored, allowing the articulation between agricultural and environmental protection areas. (p93) Implementation of an EMS including a monitoring and mitigation program of the impacts from technological parks. (p95) The development of economic activities like Tourism should embrace clear sustainability criteria while enhancing productivity through a more efficient use of resources and assuring the maintenance or valorization of natural resources and cultural identity. (p93) Promote the environmental certification and quality of productive activities. (p93)	POTRAA establishes the territorial model for each island based on the "division of the territory on four big domains of tourism development": • Urban Areas of Eventual Tourism Development, • Specific Areas of Touristic Vocation, • Area between Lagoa e Água de Pau (p5441) • Rural Areas and Others Non Specified -Ecological Areas of Greater Sensitivity In addition to these domains, POTRAA also defines: -Potential Conflict Areas • Accessibilities • Touristic Interest Points All of these domains are mapped in the Planta de Sintese of S. Miguel Island.
General Recommendations aimed for Municipal Plans Landscape integration of new renewable energy facilities and optimization of technical and location conditions for better efficiency. (VII, p43, I.1.11.) Promote agricultural good practices and support the selection of animal species on the scientific system, aiming for profitable conditions and environmental sustainability. (VII, p43, I.1.8. e I.1.9) Integration of nuclear areas for preservation of nature as preservation and protection sites in the elaboration or revision of PMOTs (VII, p46,I.2.2) Promote the preservation of soils included on the Reserva Agrícola Regional and assure the landscape integration of new territorial uses. (VII, p47, I.2.7) The preservation and valorization of cultural and historic patrimony should be combined with natural patrimony in order to protect the cultural landscapes in the region. PMOTs should pursue the maintenance and valorization of genetic material, the maintenance of typological forms of settlement and the preservation of existing building characteristics. (VII, p47/48, I.2.8.) The intrinsic territorial characteristics, the protection of natural resources, the minimization of risk situations or events like climate change should be included in all PMOTs. (VII, p49, I.2.13) PMOTs ought assure the establishment of a protection buffer on shore, the existence of vast agricultural and natural areas, and the protection of specific areas for environmental preservation, disallowing constructions. (VII, p53 , I.3.12) Integrating positive discrimination measures on projects aimed for fragmented urban areas. (VII, p57 ,I.3.17) PMOTs should match housing conditions to the needs of people and families through support tools aimed at various actors, in particular people and disadvantaged families. (VII, p69, II.8.1) The plans after PROTA should assure territorial compatibility, avoid conflicts of use and evaluate alternative development strategies and options. Projects should integrate the mandatory environmental assessment and management procedures. (VII, p90, 2.4) Promote the rehabilitation and improvement of existing equipment and infrastructure, and the recovery of areas previously occupied by other activities, instead of expanding to new areas. (VII, p91, 2.4)	**General Recommendations aimed for Municipal Plans** PMOTs should define carrying capacity in classified or protected areas, promote small-scale touristic initiatives and contribute to the improvement of efficiency on the use of land, water and nutrients for the agriculture. (p67) The revision or elaboration of PMOTs should privilege the protection of biological and landscape value of the territory. (p67) Strategic and operation plans should include procedures of greenhouse gas emissions quantification. (p71/77) Clear promotion of public space as it can potentiate human capabilities in rural and urban spaces. (p75) Articulation amongst the different PPPs, improving its efficiency and accomplishment of Quioto's Protocol and promoting the sustainable management of rural and urban systems. (p75/76) Periodical evaluation on ecological, social, physic and economic carrying capacity on territorial units. (p77) Discourage the growth of disperse settlement and second housing. (p78) Promotion of energetic efficiency and giving tax benefits on the implementation of energy efficiency measures on household sector, as a mean of promoting sustainability. (p82/84)	**General Recommendations aimed for Municipal Plans** "Support the preservation and valorization of natural, historic and cultural patrimony of the region, in a tourism perspective." (p5432, Medida 3.1) "Support the preservation and maintenance of traditions and values likely to give identity to the destination 'Azores'. (p5432, Medida 3.1) Support for base-studies necessary for the conception and structuring of unique and innovative tourism products, alongside with the ones that recognize the environmental and human values in the region. (p5432, Medida 3.2) Support for the creation of guest houses, rural tourism and small hotel units outside of urban areas of tourism expansion. (p5433, Medida 3.3) "Raising population awareness on the significance of tourism in terms of local development." (p5433, Medida 4.1) Support for integration of operational standards that embody the environmental values of the Azores in tourism practice. Promote ecolabels in tourism. (p5434, Medida 5.1) PMOTs have a key role on the definition of new accommodation areas, within the boundaries set on POTRAA. p5446 PMOTS have to define the areas with effective aptitude for tourism based on the Specific Areas of Touristic Vocation. p5447

Recommendations aimed for Terceira(Angra do Heroísmo)

Promote the urban dynamization and valorization of Angra do Heroísmo through a Urbanization Plan. (VII, p81, III.7.2.)
Increase energy self-sufficiency levels through the development of energy production from hydric, wind and geothermal sources (VII, p81, III.7.5.)
Reinforce urban complementarity between Praia da Vitoria and Angra do Heroísmo, by promoting regular public transport. (VII, p82, III.7.6.)
Prioritize the promotion actions of cultural landscapes defined in the territorial model. (VII, p82, III.7.7.)
Assure the establishment of buffer areas for the geothermal energy production facility. (VII, p82, III.7.8.)
	Potential risks of unbalanced growth areas of urban expansion should be considered, as well as those associated with tourism development, which ought be managed and monitored not compromising the territorial carrying capacity of the island. (P93)
	Consideration of territorial compatibility on new location or extension of existing infrastructures, and integration of the mandatory environmental assessment and management procedures. (p93)
	Negative environmental impacts should be considered on the implementation of renewable energy facilities. (p93)
	The potential for biodiversity conservation associated with agricultural systems should be explored, allowing the articulation between agricultural and environmental protection areas. (p93)
	The development of economic activities like Tourism should embrace clear sustainability criteria while enhancing productivity through a more efficient use of resources and assuring the maintenance or valorization of natural resources and cultural identity. (p93)
	Promote the environmental certification and quality of productive activities. (p93)
		POTRAA establishes the territorial model for each island based on the "division of the territory on four big domains of tourism development":
		• Urban Areas of Eventual Tourism Development,
		• Specific Areas of Touristic Vocation,
		• Rural Areas and Others Non Specified
		• Ecological Areas of Greater Sensitivity
		  • Faixa de Porto Martins - Baía da Salga (p5441)
		  • Zona do Negrito (p5442)
		
		In addiction to these domains, POTRAA also defines: -Potential Conflict Areas
		• Accessibilities
		• Touristic Interest Points
		
		All of these domains are mapped in the Planta de Sintese of Terceira Island.

Recommendations aimed for tourism sector

Genreal Recommendations applicable for tourism sector Promote the implementation of environmental certification schemes of touristic products. (VII, p43, I.1.7.) Integrate energy efficiency as a mandatory criteria on the evaluation of new location projects of corporate entities, namely in tourism activity. (VII, p44, I.1.12) The territorial model management aim for the compatibility of touristic activity with the environmental and landscape values of the region, strictly managing the occupation of coastal areas. (VII, p44, I.1.15.) Promote a cultural, nature and rural tourism, enjoying the region's natural conditions, aiming for visitors with environmental awareness, in order to achieve sustainability goals. (VII, p88, 2.4) Prioritize projects that adopt good environmental management practices with social and environmental awareness and contribute to the achievement of regional sustainability goals. (VII, p88, 2.4) Ensuring environmental sustainability of the main areas of tourist occupation should be an essential requirement for the approval of projects. (VII, p88, 2.4) Complement the focus on renewable energies with initiatives on energy efficiency and the possibility of creating decentralized energy production networks. (VII, p89, 2.4)	**Genreal Recommendations applicable for tourism sector** Promotion of quality and certification of products and services, considering environmental, social and economic criteria and promoting the Azores brand as a sustainable development promoter. (p59) Creation of a Sustainable Development Indicator Sectorial System, including the environmental and sustainability performance evaluation of the main economic activities. (p63) Promotion of ecoefficiency and rationalization of resources should be applied on constructive and operation levels in new corporate units..(p64) Implementing alternative processes in the energy sector sector market, such as the use of plant and animal biomass. (p65) Monitoring of strategic options of territorial basis through instruments aimed at the enhancement of environmental sustainability and the potential biodiversity of the Azores. (p67) Public participation should be encouraged on the management of conflicts between nature conservation and economic activities. (p70)	**Specific Objectives** 1. Promoting the development of the Azorean tourism sector, providing it with the necessary and sufficient skills to meet the purposes set by the major regional strategy documents to the sector; (p5419) 2. Ensuring that the sector's development will proceed in strict environmental, social and economic standards; (p5419) 3. Enhance a tourism sector that contributes to the correct management of the region's territory, avoiding functions and interests conflicts and an uncontrolled occupation of the territory; (p5419) 4. Adoption of a tourism development strategy that can contribute to territorial justice and solidarity amongst all parts of the territory. (p5419)
Specific Recommendations aimed for tourism secto The PROTA implementation strategy for tourism is covered by the application of POTRAA. (VII, p62, II.4.1.) Energy efficiency and good practices on waste management and production should be encouraged in hotel units already established in the Azores. (VII, p62, II.4.2.) Creation of tourism monitoring instruments that allows regular examining of environmental conditions integration of new hotel units. (VII, p62, II.4.3.) The creation of tourist tours in environmental sensitive areas should be limited and supported with the implementation of interpretive centers that promote proper identification and signaling of environmental, historical and cultural heritage sites. (VII, p63, II.4.5., II.4.6.) Rural tourism units should dispose of special construction conditions, with the promotion of recuperation and expansion of existing buildings, environmental and landscape integration conditions and local building typologies valorization. (VII, p63/64, II.4.7, II.4.8)	**Specific Recommendations aimed for tourism sector** Recreational and leisure activities should be created not only for touristic purposes, but also for the local habitants. (p57) Promotion of types of tourism (cultural, nature, rural) that can attract visitors with environmental awareness and greater purchasing power. Using environmental sustainability as an essential requirement for the approval of projects in the main areas of tourist occupation. (p66) Promotion of tourism that values the natural and cultural heritage of the region, with due regard for spatial planning and nature conservation. (p66) Promote the implementation of environmental certification schemes of touristic products. (p67) Using strict criteria for risk assessment on the location of tourism expansion areas, aiming to minimize pressures and vulnerability to natural or technological hazards. (p67) The development of tourism (together with other activities) could jeopardize the objectives of environmental protection. In this context it is essential that environmental protection and valorization are priorities. (P72 / 73)	**Actions and Mesures for tourism development** Creation of investigation scholarships and promote the writing of thesis particularly relevant for tourism sector. (p5431, Medida 1.1) Reinforce the support on the development of handcraft activities and its commercial channels. (p5431, Medida 2.2) Support on the preservation, recuperation and valorization of touristic value areas. Promote the maintenance of the traditional values of the Azores. (p5432, Medida 3.1) Promote the preservation and valorization of the natural, historic and cultural heritage of the region, in a tourism perspective. (p5432, Medida 3.1) Support for base-studies necessary for the conception and structuring of unique and innovative tourism products, alongside with the ones that recognize the environmental and human values in the region. (p5432, Medida 3.2) Support for the creation of guest houses, rural tourism and small hotel units outside of urban areas of tourism expansion. (p5433, Medida 3.3) Support the strengthening, qualification, diversification and integration of local gastronomy traditions in restaurants. (p5433, Medida 3.4) Creation or strengthening of a favorable domestic environment for tourist reception. (p5433, Medida 4.1) Promote actions of spatial planning that encourage the preservation of resources, the sustainability of the tourism sector and the territorial justice. (p5434, Medida 5.1) Support for integration of operational standards that embody the environmental values of the Azores in tourism practice. Promote ecolabels in tourism. (p5434, Medida 5.1)

Annex II - Local Documents Content Analysis

		PDM Ponta Delgada	PDM Angra do Heroísmo
General Objectives and Recommendations that include sustainaility concepts	Strategic Lines aimed for PDL and Angra	"a) Economic development / competitiveness: 1. Reinforce the role of the city as the main center for trade, service, education and culture in the archipelago; 2. Assume the role of logistic platform of distribution on the archipelago (passengers and goods) 3. Launch new tourism products and enhance the existing tourism offer. Assume the role of reception and distribution platform of tourism and the role of promoting the regional tourism. 4. Develop active policy of support to the productive sector (tertiary, secondary and primary) b) Social cohesion 1. Create conditions for better access to housing 2. Create conditions for the creation of employment, namely outside of Ponta Delgada's urban area 3. Improve population's access to goods and services c) Environmental protection and valorization 1. Protection and qualification of natural resources and built patrimony; 2. Use of urban structures and infrastructures in urban regeneration; 3. Environmental and sound pollution control; 4. Improvement on the efficiency of the sewage systems " (Annex 1, Art. 3º)	**No strategic lines are defined for the plan** From an extensive analysis on the document it is possible to conclude that there is no strategic approach for sustainability in PDM Angra. There are some concepts regarding the different dimensions of sustainability but, generally, the link between them is absent. This disaggregation makes the implementation of a vision of sustainable development for the territory hard to achieve.
	Recommendations aimed for tourism sector	A great number of implications and constructive restrictions for tourism sector are given, without a link between the different dimensions of sustainability (Annex 1): **Rural Soil Use** : -Art. 16º; -Natural Areas: Art. 21º/27º (Specific Vocation Areas); -Forest Areas: Art. 31º; -Agricultural Areas: Art. 34º; **Urban Soil Use**: -Existing public places: Art. 48º; - Tourism Developments and Equipments: Art. 52º; - Buildings of patrimonial value : Art. 53º; **Urbanized Land**: - Urban conversion area of the city's coastal front: Art. 66º; - Areas with cultural, patrimonial and landscape interest: Art. 77º ; **Soils on which urbanization is possible to program** : - Housing areas of level I: Art. 83º; -Mixed housing areas or from levels II to VI: Art. 86º; - Tourism Area – Batalha golf course - Art. 97º; **Infrastructure Implications**: Road network: Art. 104º; parking: Art. 110º/111º. In some situations tourism developments are preferred over others, which can reveal environmental, economic and possibly social concerns (Annex 1): **Urban conversion area of the city's coastal front**: Art. 65º: Tourism uses together with housing, trade, services and restaurants are preferable. **UOPG 4** – Urban conversion area of Freguesia de S. Roque: Art. 131º c) Privilege touristic uses and public use of the see front. **UOPG 5** – Urban conversion area located between the correctional facility and Pranchinha (...) :Art.132º b) Expanding the waterfront avenue, (...) with preferable touristic uses and public use of the see front. **UOPG 20** - Freguesia de Mosteiros: 147º b) Promote tourism and ocean related leisure and recreational activities. **UOPG 25** — Freguesias de Capelas, São Vicente Ferreira e Fenais da Luz: Art. 152º b) Valorize the built patrimony and the coastal front, minding its touristic interest. The use of existing built patrimony for tourism developments can be associated with sustainable tourism concepts (Annex 1): Art. 18º 1 — Buildings of patrimonial value are under a specific construction regime when they are being reconverted for tourism use, as long as: a) Its historical, artistic, architectonic, botanic, landscape or socio-cultural value is recognized by the Câmara Municipal. b) Restoration or conservation work is done on the buildings or gardens.	Constructive restrictions on agricultural and forest areas without directly invoking issues relating to sustainability dimensions: Agricultural Areas Annex 1, Art. 29º, 3: " The licensing of tourist accommodation developments to classify as hotel establishments, tourist apartments, tourist villages or rural tourism and tourist activities must comply with the following parameters (...) " Forest Areas Annex 1, Art. 32º, 5: "The licensing of tourist accommodation developments to classify as hotel establishments, tourist apartments, tourist villages or rural tourism and tourist activities must comply with the following parameters (...)"
Other Recommendations included in precedent plans		• - Restore of coastal landscape (Annex1, UOPG 14,20,25 / Art.) • - Possibility for the expansion of the construction area in urbanistic operations aimed for social housing. (Annex 1, Art. 57º, 1) • - The shutting down of a soil removal exploration implies the removal of any support infrastructures, which sould part of the Environmental Plan of Landscape Recuperation. (Annex 1, Art. 38º,3) • - Define, in articulation with the road and walkable structure, spaces like green areas or other public utility areas. (Annex 1, UOPGs 1,2, 7-13, 15-25 / Art. 128º,129º, 134º-140º, 142º-152º) • - Natural spaces should be environmentally valorized not only for their increased vulnerability, but also for their importance for preservation and sustainability of the territory. (Annex 1, Art. 19º) • - Protection and qualification of natural resources and built patrimony. (Annex 1, Art. 3º, 2, c) • Urban interventions cannot, in any case, destroy or disvalue the existent landscape, natural or architectonic patrimony, ensuring the maintenance of the landscape characteristics, namely through the preservation of vegetal species and built elements like the hand built rock walls. (Annex 1, Art. 15º, 2) • - Preservation of the hand built walls, the arboreal species and the natural modeling of the land, and valorization of the built architectonic patrimony (Annex 1, Art. 83º, d) • - The historic center of Ponta Delgada is classified as a historic area, where the preservation of the architectural and urban patrimony is privileged, along with the correct integration in the urban canvas and the maintenance of the urban typical aspect. (Annex 1, Art. 60º) • - In the pineapple agricultural areas the construction of greenhouses has no area restrictions. (Annex 1, Art. 77º, 2) • In agricultural spaces actions that contribute to the weakening or destroying of its agricultural capabilities are forbidden. (Annex 1, Art. 33º) • - Possibility of recuperation or expansion of existing rural tourism facilities, when located outside of risk areas in natural spaces. Also applicable for new rural tourism developments in forest spaces. (Annex 1, Art. 21º d, Art. 31º c)	When possible, the construction and soil use on agricultural spaces of the Regional Agricultural Reserve is subjected to special construction standards. (Annex 1, Art. 29º) In natural spaces the protection of natural resources and landscape values are encouraged. The allowed activities in these areas include: agricultural and forest activities that minimize erosion agents; and extensive agricultural and forest activities, instead of intensive and chemic-based activity. (Annex 1, Art. 33º, 34º) The transition green areas aim for the creation of a ecological urban structure, assuring the prevalence of natural ecosystems and promoting the environmental qualification of the city. (Annex 1, Art. 17º) Urban developments aimed for social housing have a special construction regime. (Annex 1, Art. 12º, 14º) In rural areas where construction is allowed it is mandatory the preservation of hand built rock walls. (Annex 1, Art. 14)

Annex III - Operational Documents Content Analysis

	EMS Hotel Marina Atlântico (Ponta Delgada)	EMS Terceira Mar Hotel (Angra do Heroísmo)
Sustainability concerns included	The organization wishes to contribute to the regional ecological aware and promote a cleaner and safer future, with increased life quality. (Environmental Policy)	The EMS promotes the sustainable use of natural resources, optimizing its consumption and reducing waste production. (Environmental Policy) The organization wishes to create an expanding sustainable community. (Environmental Policy)
Recommendations included in precedent plans	The EMS itself can be seen as an implemented recommendation from precedent plans as PROTA recommend the implementation of environmental certification schemes. As recommended on SEA PROTA, the organization uses alternative energy processes (biomass). The EMS promotes the rationalization of resources, energy efficiency and good practices on waste management as recommended on SEA PROTA and PROTA. The EMS aims for raising the population awareness on the importance of environmental matters for tourism as recommended on POTRAA.	The EMS itself can be seen as an implemented recommendation from precedent plans as PROTA recommend the implementation of environmental certification schemes. The EMS promotes the rationalization of resources, energy efficiency and good practices on waste management as recommended on SEA PROTA and PROTA. The EMS aims for raising the population awareness on the importance of environmental matters for tourism as recommended on POTRAA.